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EXAMINER

ROSSI, JESSICA

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/864,779

Applicant(s)

TAYLOR ET AL.

Examiner

Jessica L. Rossi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/1/03, Election.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 25-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group 1, Species A (claims 1-24), in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without traverse** (MPEP § 818.03(a)). Claims 25-40 are withdrawn from further consideration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 18, 20, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 8 and 24, it is unclear how the adhesive composition can "comprise" **and** "consist essentially of" hemicellulose and water. These terms directly contradict each other since the later does not exclude the adhesive comprising other components while the former does. The examiner recognizes that these dependent claims are meant to further limit the independent claim, but the limitations set forth in the dependent claim must not contradict those set forth in the independent claim since the dependent claim is just an independent claim written in short-hand form to include all the limitations of the independent claim. Applicants are asked to clarify.

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Regarding claims 18 and 20, they recite the limitation "the first laminae" in line 1. There is insufficient antecedent basis for this limitation in the claim because a first laminae was never established in claim 17. It is suggested to change this to --substrate--.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu et al. (US 4514532).

It is noted that the specification of the present invention defines a "prepreg" as a fibrous substrate that is impregnated with an adhesive composition comprising hemicellulose and water (p. 7, 2nd paragraph).

With respect to claim 17, Hsu is directed to a method for making a prepreg by providing a liquid pregnable fibrous substrate (column 8, lines 55-61; column 9, lines 9-12) and impregnating the substrate (note that reference talks about "completely coating" the fibers constituting the substrate with the adhesive, which means impregnating; column 8, lines 55-61) with an adhesive composition comprising hemicellulose and water (note that reference refers to adhesive as "aqueous solution", which means the components are dissolved in water; column 2, lines 28-40).

Regarding claims 18-20, Hsu teaches the substrate comprising a woven or non-woven mat of glass fibers (column 9, lines 10-12).

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Regarding claim 21, Hsu teaches the adhesive composition comprising one or more bonding agents and water with the hemicellulose being present in an amount of at least 10% by dry weight of the one or more bonding agents (column 2, lines 32-39).

Regarding claim 22, Hsu teaches the hemicellulose being present in an amount of at least 50% by dry weight of the one or more bonding agents (column 2, lines 32-39).

6. Claims 17 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayla et al. (US 4587285).

With respect to claim 17, Ayla is directed to a method for making a prepreg by providing a liquid pregnable fibrous web (column 1, lines 9-13) and impregnating the web with an adhesive composition comprising hemicellulose and water (note that reference refers to adhesive as “aqueous solution”, which means that the components are dissolved in water; column 2, lines 57-61; column 3, lines 15-17).

Regarding claims 21-22, Ayla teaches the adhesive composition comprising one or more bonding agents (claim 1) and the hemicellulose being present in an amount of at least 10% and up to 90% (column 2, lines 57-66).

7. Claims 17-18 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Amosov et al. (US 4075028).

With respect to claim 1, Amosov is directed to making a prepreg by providing a liquid pregnable paper or non-woven web (column 5, lines 6-8) and impregnating the paper or non-woven web with an adhesive composition comprising hemicellulose and water (column 1, lines 30-31; column 2, line 59; column 3, lines 25-29 and 50-52; column 5, lines 49-55).

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Regarding claim 18, Amosov teaches the non-woven web being a non-woven mat of fibers (column 1, lines 18-20).

Regarding claims 21-22, Amosov teaches the adhesive composition comprising one or more bonding agents and water with the hemicellulose being present in an amount no less than 13% (column 3, lines 50-52).

8. Claims 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Osgood et al. (US 2019056).

With respect to claim 17, Osgood is directed to making a prepreg by providing a liquid pregnable wood substrate (column 2, lines 1-6) and impregnating the wood substrate with an adhesive composition comprising hemicellulose and water (column 2 lines 2-5 and 30-40; column 3, lines 12-13).

9. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Hicklin et al. (US 4071651).

With respect to claim 17, Hicklin is directed to making a prepreg by providing a liquid pregnable fibrous ply 41/42 and impregnating the ply with an adhesive composition comprising hemicellulose and water (note that inner plies 41/42 are impregnated with “sizing agent” that includes adhesive composition comprising hemicellulose and water; abstract; column 4, lines 51-53; column 3, lines 12-13).

Claim Rejections - 35 USC § 102/103

10. Claims 1, 9, and 10-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hicklin et al.

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With respect to claim 1, Hicklin is directed to making a laminate by providing a first web 41 and a second web 42, where both webs are impregnated with a liquid adhesive composition comprising hemicellulose and water such that the webs are simultaneously heated and pressed to bond the same along their bonding interface (Figures 2 and 4; abstract; column 3, lines 12-13 and 38-41; column 4, lines 51-53). The skilled artisan would have appreciated that evaporation/dewatering of some or all of the adhesive would take place during heating.

Alternatively, the skilled artisan would have appreciated that evaporation/dewatering of the adhesive and the extent of this evaporation/dewatering would depend on the temperature at which heating takes place, which would have been within purview of the skilled artisan at the time the invention was made. It would have been obvious to heat press at a temperature where evaporation/dewatering would take place because this allows for formation of a strong bond.

Regarding claim 9, the skilled artisan would have appreciated that the reference teaches dewatering by heating.

Regarding claims 10-12, the reference teaches impregnating the first and second webs prior to contacting them with each other (note that "sizing agent" is also sprayed onto first and second webs at 26 and 27, respectively, before contacting the webs to form laminate 8; Figure 1; column 2, lines 38-45 and 48-49).

Regarding claims 13-14, the reference teaches the first and second fibrous, impregnated webs being prepregs.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 9, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osgood et al. in view of Rogers (US 4942191) and Giesfeldt et al. (US 5855659; provided in IDS).

With respect to claim 1, Osgood teaches a method for preparing a veneer laminate by providing first and second wood plies that are liquid pregnable such that both plies are impregnated with a liquid adhesive composition comprising hemicellulose and water after the adhesive is applied between the plies and the assembly is subsequently pressed (column 3, lines 24-25; column 2, lines 1-6 and 30-40; column 3, lines 10-14 and 28-29). The reference is silent as to dewatering the adhesive.

It is known in the art to bond wood plies using an adhesive derived from agricultural residue (column 1, lines 7-11 and 60-62) by simultaneously pressing and heating the assembly, as taught by Rogers (column 13, lines 42-45). It is also known in the art to bond two substrates (i.e. corrugated board) using an adhesive composition comprising an agricultural residue, specifically hemicellulose and water, by simultaneously pressing and heating the assembly, as taught by Giesfeldt (column 2, lines 13-26; column 7, lines 42-45), where the skilled artisan would have appreciated that some or all of the water would be evaporated during heating.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to simultaneously heat the wood plies of Osgood during pressing because it is known in the art to do such when bonding wood plies using an adhesive similar to that of Osgood, as taught by Rogers, and it is known to do such when bonding substrates using an adhesive

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composition comprising hemicellulose and water, as taught by Giesfeldt, where this would result in evaporation/dewatering of the adhesive thereby forming a strong bond between the substrates.

Regarding claim 9, Rogers and Giesfeldt teach dewatering by heating.

Regarding claim 15, Osgood teaches placing the first and second plies into contact along the bonding interface prior to impregnating them (Figure 1; column 3, lines 24-32).

Regarding claim 16, Osgood teaches both plies being liquid pregnable and impregnating both plies after placing them into contact along the bonding interface (Figure 1; column 3, lines 24-32).

13. Claims 2-6 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicklin et al. as applied to claim 17 above, and in view of Hsu et al.

Regarding claims 2-4 and 18-20, Hicklin is silent as to the type of fibrous web. It would have been obvious to use a non-woven or woven mat of fibers, such as glass fibers, because such is know in the art, as taught by Hsu (column 9, lines 8-12), where such a mat has applicability in various industries (i.e. insulation industry).

Regarding claims 5-6 and 21-22, Hicklin teaches the hemicellulose being a bonding agent and the composition including water (column 3, lines 12-13; column 4, lines 51-53). The reference is silent as to the amount of hemicellulose being present in the adhesive. Selection of a particular amount would have been within purview of the skilled artisan at the time the invention was made. Those skilled in the art would have determined through routine experimentation the desired amount of hemicellulose to achieve the necessary adhesiveness. However, it would have been obvious to use the hemicellulose in an amount of at least 10% or 50% because it is known

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in the art to bond wood plies using an adhesive having hemicellulose present in the these amounts, as taught by Hsu (column 2, lines 30-40; column 4, lines 59-60).

14. Claims 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicklin et al. and Hsu et al. as applied to claims 6 and 21 above, and further in view of the Admitted Prior Art.

Regarding claims 7 and 23, Hicklin teaches hemicellulose but is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Hicklin from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

15. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osgood et al., Rogers, and Giesfeldt et al. as applied to claim 1 above, and further in view of Hsu et al.

Regarding claims 5-6, Osgood teaches the adhesive composition comprising one or more bonding agents and water (column 3, lines 23-25; claim 1). The reference is silent as to the amount of hemicellulose being present in the adhesive. Selection of a particular amount would have been within purview of the skilled artisan at the time the invention was made. Those skilled in the art would have determined through routine experimentation the desired amount of hemicellulose to achieve the necessary adhesiveness. However, it would have been obvious to use the hemicellulose in an amount of at least 10% or 50% because it is known in the art to bond

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wood plies using an adhesive having hemicellulose present in the these amounts, as taught by Hsu (column 2, lines 30-40; column 4, lines 59-60).

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osgood et al., Rogers, Giesfeldt et al., and Hsu et al. as applied to claim 6 above, and further in view of the Admitted Prior Art in the specification of the present application.

Regarding claim 7, Osgood teaches the hemicellulose being derived from a hemicellulose containing agricultural residue having alkaline present in the final product (column 1, lines 34-40; column 2, lines 30-35) but is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Osgood from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

17. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osgood et al., as applied to claim 17 above, and in view of Hsu et al.

Regarding claims 21-22, Osgood teaches the adhesive composition comprising one or more bonding agents and water (column 3, lines 23-25; claim 1). The reference is silent as to the amount of hemicellulose being present in the adhesive. Selection of a particular amount would have been within purview of the skilled artisan at the time the invention was made. Those skilled in the art would have determined through routine experimentation the desired amount of hemicellulose to achieve the necessary adhesiveness. However, it would have been obvious to

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use the hemicellulose in an amount of at least 10% or 50% because it is known in the art to bond wood plies using an adhesive having hemicellulose present in the these amounts, as taught by Hsu (column 2, lines 30-40; column 4, lines 59-60).

18. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osgood et al. and Hsu et al. as applied to claim 21 above, and further in view of the Admitted Prior Art.

Regarding claim 23, Osgood teaches the hemicellulose being derived from a hemicellulose containing agricultural residue having alkaline present in the final product (column 1, lines 34-40; column 2, lines 30-35) but is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Osgood from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

19. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu et al., as applied to claim 21 above, and in view of the Admitted Prior Art.

Regarding claim 23, Hsu is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Hsu from an alkaline cooked hemicellulose-containing

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agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

20. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayla et al., as applied to claim 17 above, and in view of Hsu et al.

Regarding claim 18, Ayla is silent as to the type of fibrous substrate. It would have been obvious to use a non-woven or woven mat of fibers, such as glass fibers, because such is known in the art, as taught by Hsu (column 9, lines 8-12), where such a mat has applicability in various industries (i.e. insulation industry).

21. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ayla et al. and Hsu et al. as applied to claim 21 above, and further in view of the Admitted Prior Art.

Regarding claim 23, Ayla is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Ayla from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

22. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amosov et al., as applied to claim 17 above, and in view of the Admitted Prior Art.

Regarding claim 23, Amosov is silent as to the hemicellulose being derived from an alkaline cooked hemicellulose-containing agricultural residue. The skilled artisan would have appreciated the various ways for deriving hemicellulose and therefore selection of a particular

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method would have been within purview of the skilled artisan. However, it would have been obvious to derive the hemicellulose of Amosov from an alkaline cooked hemicellulose-containing agricultural residue because such is known in the art, as taught by the Admitted Prior Art (p. 3, 1st paragraph).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **703-305-5419**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

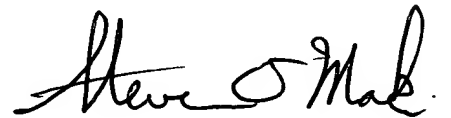
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jessica L. Rossi
Patent Examiner
Art Unit 1733



jl
June 13, 2003



STEVEN D. MAKI 6-13-03
PRIMARY EXAMINER
~~GROUP 1300~~
A-1733